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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,226	01/22/2004	Kazumi Ohtake	118392	2744

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OLIFF & BERRIDGE, PLC  
P.O. BOX 19928  
ALEXANDRIA, VA 22320

EXAMINER

LIN, KUANG Y

ART UNIT	PAPER NUMBER
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1725

DATE MAILED: 03/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/761,226	<b>Applicant(s)</b> OHTAKE ET AL.	
	<b>Examiner</b> Kuang Y. Lin	<b>Art Unit</b> 1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2006.  
 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.  
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
 6) ☒ Claim(s) 1 and 3 is/are rejected.  
 7) ☒ Claim(s) 2 and 4 is/are objected to.  
 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:  
 1. ☐ Certified copies of the priority documents have been received.  
 2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
 \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the Patentability shall not be negated by the manner in which invention was made to a person having ordinary skill in the art to which said subject matter pertains. the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over either JP 56-86,645 or JP 2-165,859 and further in view of JP 59-110,455.

Each of the primary references substantially shows the invention as claimed except that they do not show to close the runner during solidification process. However, JP 455 teaches to close the runner during the solidification process such that to maintain a predetermined pressure within the mold cavity and thereby to prevent the generation of shrinkage cavity within the cast part. It would have been obvious to close the runner of the primary references during their solidification process in view of advantage as taught by JP '455. With respect to claim 2, it would have been obvious to obtain the optimal process

parameters through routine experimentation. With respect to claims 3 and 4, it would have been obvious to use an appropriate insulating material for coating the die surface as long as it would fulfill the designated insulating function.

4. Claims 2 and 4 are objected to as depending from a rejected claim. However, they contain an allowable subject matter and will be allowed upon being rewritten in an independent format.

5. Applicant's arguments filed Feb. 24, 2006 have been fully considered but they are not persuasive.

a. Applicant's main argument is in that none of the primary references shows the closing step as claimed. However, secondary reference shows to close the runner such that a pressure can be applied to the solidifying metal. It would have been obvious to close the runner of the primary references in view of the secondary reference such that an external pressure can be applied to the solidifying molten metal and thereby to reduce the solidification porosity. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

b. Although the primary references show to solve the problem which is different from that of secondary reference, it is always beneficial to apply an external pressure in the solidifying casting for reducing the porosity if a casting

with a better quality is designated. Thus, it would have been obvious to apply an external pressure in the process of the primary references in view of the secondary reference for obtaining a casting of better quality.

c. In the secondary reference (JP '455) the runner must be closed prior to pressure application such that to prevent pressurized molten metal from escape from the runner. Thus, it would have been obvious to close the runner of the primary references prior to the application of an external pressure.

d. In page 2, 2<sup>nd</sup> paragraph of the remarks applicant stated that JP '859 teaches to rapidly cool the molten cast iron in the die and he concluded that JP '859 teaches away from maintain a temperature or preventing the rapid cooling of the molten metal by closing the die. However, it is not clear why the process of rapid cooling will teach away the step of closing step. In JP '859 a coating is applied to the mold. Therefore, the cooling rate of molten metal is slower than that of being cast into a mold without coating, though it is faster than that of being into a mold with a thicker coating.

e. Since both JP '859 and JP '455 cast spheroidal graphite cast iron, the crystallization of the spheroidal graphite will also perform the same function as the spheroidal graphite in the instant process, though may be in different degree.

f. In page 3 of the remarks applicant stated that JP '455 fails to provide any disclosure or suggestion to use the pressing means with a die formed with a heat insulating layer. However, both primary references show to provide a coating

layer in a die. Prior art teachings must be view as a whole, rather than individually. Thus, applicant's argument is moot.

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kuang Y. Lin whose telephone number is 571-272-1179. The examiner can normally be reached on Monday-Friday, 10:00-6:30,.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas X. Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Kuang Y. Lin  
Primary Examiner  
Art Unit 1725

3-20-06